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Zoran Popović
ENGAGE: A Game Based Learning and Problem Solving Framework (Task 1 Month 6)
Progress, Status and Management Report
Monthly Progress Report

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Technical Information

1. Technical Progress / Highlights - Observations

In August we performed multiple playtests of the games to surface game design problems and interface issues. We fixed a large number of bugs and developed "infrastructure" type systems (caching, preloaders, display of Terms of Service, etc.) in order to help us as we begin to release the games to schools and partner sites. We worked towards a common framework for the presentation of pre- and post-assessment questions and refined the actual questions with the help of the Learning Science group.

We began interfacing with partners and potential partners at the technical level to work to make the most recent version of the games available to students. This includes our physical school districts in Houston, Piedmont and Colorado, as well as our educational website partners K12.com, Edmodo, BrainPop, and CFY's PowerMy Learning.

We ported DragonBox, the algebra game, to Flash and began hooking up gameplay logging and other Center for Game Science backend systems to it. In the future, we plan to extend the game significantly by creating an adaptive version of the game with automatically generated progressions, the ability to allow for "free" manipulations of terms without enforcing equality (in order to test for transfer), expansion of the types of problems that can be presented by the game, and the addition of various online social features.

We opened a position for a full-time Data Analyst (for background on this, see "Changes to the Contract Organization," below) and filled it; we are now working on ramping up this staff member with our database and logging systems.

2. Results or Problems and Solutions

While we were working with educators from the Learning Science team on ideal level progressions for each of the games, the issue of pacing and openness of quest design in the Overworld came up. This could could be designed either to be very linear (e.g. play three levels of Treefrog Treasure first to unlock Refraction, play three levels of Refraction to get a reward, etc.) or very open (essentially allowing students to play whatever game they want and get rewards).

Educators informed us that that the freedom to go back and play Refraction (for example) for as long as a player wanted was often seen as a big reward. Therefore, we decided to try a design where the games open up completely for players after the currently designed level progressions are completed. The optimal quest pacing and design will, of course, be informed by the ongoing analysis of gameplay metrics once we begin to gather those in volume.

Another feedback point from educators is the desire for a common element that ties the games together so that the kids see they are related concepts. For example, this might take the form of overall narrative experience to the Overworld and its associated games that provides a natural end-point goal and reinforces the connection between all of the different games.

3. Significant Accomplishments Anticipated During Next Reporting Period

The games Refraction, Treefrog Treasure, Creature Capture, Planetopia and DragonBox will be in active use by students along with a functional Teacher Control Panel with visualizations of student performance and basic assessment algorithms. Data Analyst will be up to speed on our data structures and data gathering methods and able to produce analyses on short notice when required.

4. Publications relevant to this effort

- N/A

5. Meetings and Events (Please include meetings with subcontractors)

- Presentation of our research goals and approach to CDR Joseph Cohn on August 30th.

6. Changes to the Contract Organization

Recently, we were notified that one of our subcontractors at UT Austin, Helen Taylor Martin, is leaving her current position at UT Austin. For the same reason, over the past few months the learning science part of the analysis has been somewhat behind with a number of analyses still outstanding (UT Austin has not invoiced us for that part of the missing work as well, which is why our current expenditures do not match the projections).

As of next month (September 1, 2012), Prof. Martin will be moving to Utah State University. This of course has implications to the responsibility of that subcontract and the need to ensure that the work can be done by a combination of people.

- As discussed with CDR Joseph Cohn and Ciara Sibley in August, we are planning on hiring the services of both Carmen Petrick and Taylor Martin as independent consultants until University of Vermont and Utah State University sign a DoD Addendum.

- We have created and filled a new position of educational Data Analyst at the UW Center for Game Science who will work directly with us to analyze the data on the daily basis, something that has been challenging to do with graduate students at UW Dept of Education and UT Austin.

With this new arrangement, we will have a much better working process that is more diversified which would also enable us to move at the rapid speed that our project requires. This restructuring will be conducted in a way that primarily redistributes the subcontract to UT Austin which is terminating due to the departure of Prof. Martin.